Kramer Electronics, Ltd.

USER MANUAL

Model:

VP-422

HDMI to PC Scaler

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis[1]. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Thank you for purchasing your Kramer **VP-422** *HDMI to PC Scaler*. These products are ideal for:

- Projection systems in conference rooms, boardrooms, hotels and houses of worship
- Home theater up-scaling

The package includes the following items:

- **VP-422** *HDMI to PC Scaler*
- Power adapter (5V DC input)
- This user manual[2]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables[3]

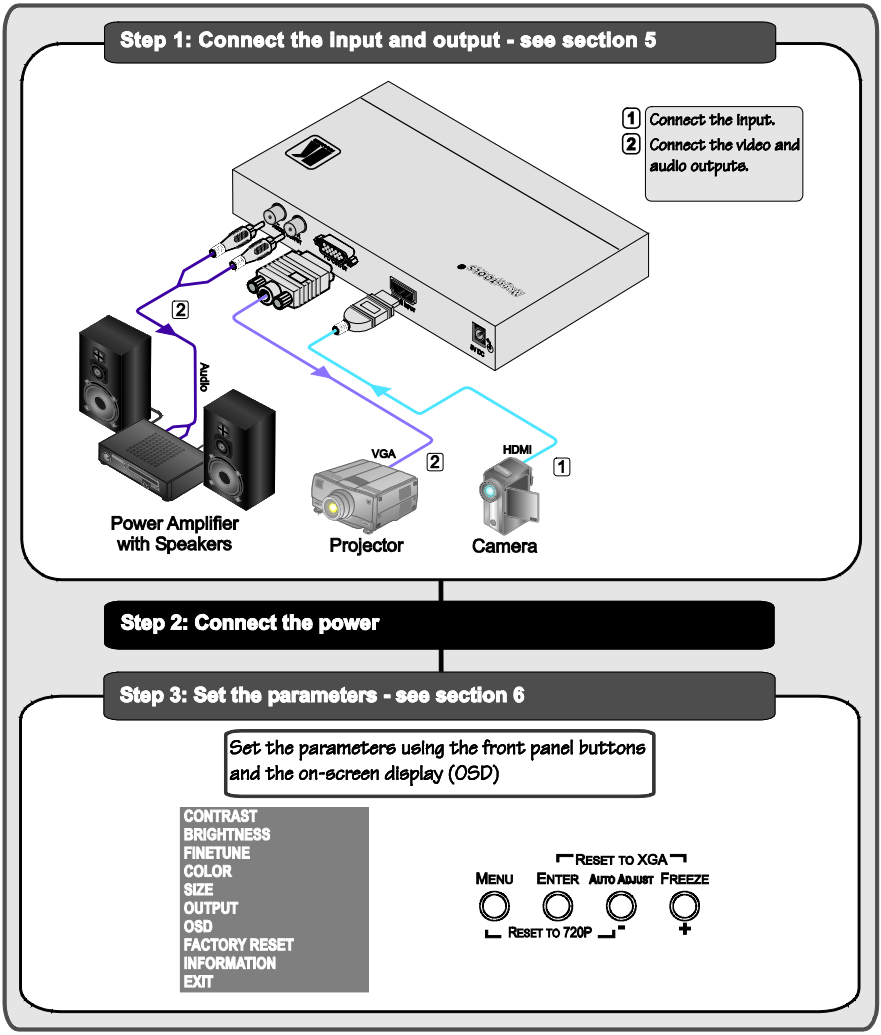
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from the Internet at this URL: http://www.kramerelectronics.com

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.



3 Overview

The Kramer **VP-422** *HDMI to PC Scaler* is a high-performance digital scaler for computer graphics and HDTV signals. It up- or down-scales HDMI signals to resolutions up to WUXGA and 1080p and de-embeds the stereo audio to output as unbalanced analog stereo signals. The following output resolutions are supported: **PC**: VGA, SVGA, XGA, 1280x800, SXGA, UXGA, WXGA, SXGA+, WXGA+, WSXGA, WUXGA, 1600x900, 1080pRGB; **HDTV**: 480p, 576p, 720p @50/60Hz, 1080p @50/60Hz, 1080i @50/60Hz.

The **VP-422** *HDMI to PC Scaler* also features:

- An On-Screen Display (OSD) for easy setup and adjustment, accessible via the front-panel buttons
- A built-in ProcAmp for convenient signal adjustment
- A non-volatile memory that retains the last settings used
- Quick auto-adjust
- Freeze button
- RGBHV or component video output
- An external 5V DC power source, making it suitable for field operation

Operate your **VP-422** directly via the front panel push buttons and the on-screen display (OSD).

To achieve the best performance:

- Use only good quality connection cables[1] to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality and position your Kramer **VP-422** away from moisture, excessive sunlight and dust

Caution:	No operator serviceable parts inside the unit
Warning:	Use only the Kramer Electronics input power wall adapter that is provided with the unit
Warning:	Disconnect the power and unplug the unit from the wall before installing

1 Available from Kramer Electronics on our Web site at http://www.kramerelectronics.com

3.1 About HDMI

High-Definition Multimedia Interface (HDMI) is an uncompressed all-digital[1] audio/video interface, widely supported in the entertainment and home cinema industry. It delivers the highest high-definition image and sound quality.

In particular, HDMI[2]:

- Provides a simple[3] interface between any audio/video source, such as a set-top box, DVD player, or A/V receiver and video monitor, such as a digital flat LCD / plasma television (DTV), over a single lengthy[4] cable
- Supports standard, enhanced, high-definition video, and multi-channel digital audio[5] on a single cable
- Transmits all ATSC HDTV standards and supports 8-channel digital audio, with bandwidth to spare to accommodate future enhancements and requirements
- Benefits consumers by providing superior, uncompressed digital video quality via a single cable[6], and user-friendly connector
- Is backward-compatible with DVI (Digital Visual Interface)
- Supports two-way communication between the video source (such as a DVD player) and the digital television, enabling new functionality such as automatic configuration and one-button play

HDMI has the capacity to support:

- Existing high-definition video formats (720p, 1080i, and 1080p/60), as well as standard definition formats such as NTSC or PAL

1 Ensuring an all-digital rendering of video without the losses associated with analog interfaces and their unnecessary digital-to-analog conversions

2 HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI licensing LLC

3 With video and multi-channel audio combined into a single cable, the cost, complexity, and confusion of multiple cables currently used in A/V systems is reduced

4 HDMI technology has been designed to use standard copper cable construction at up to 15m

5 HDMI supports multiple audio formats, from standard stereo to multi-channel surround-sound. HDMI has the capacity to support Dolby 5.1 audio and high-resolution audio formats

6 HDMI provides the quality and functionality of a digital interface while also supporting uncompressed video formats in a simple, cost-effective manner

4 Your VP-422 HDMI to PC Scaler

Figure 1 and Table 1 define the **VP-422** *HDMI to PC Scaler*:

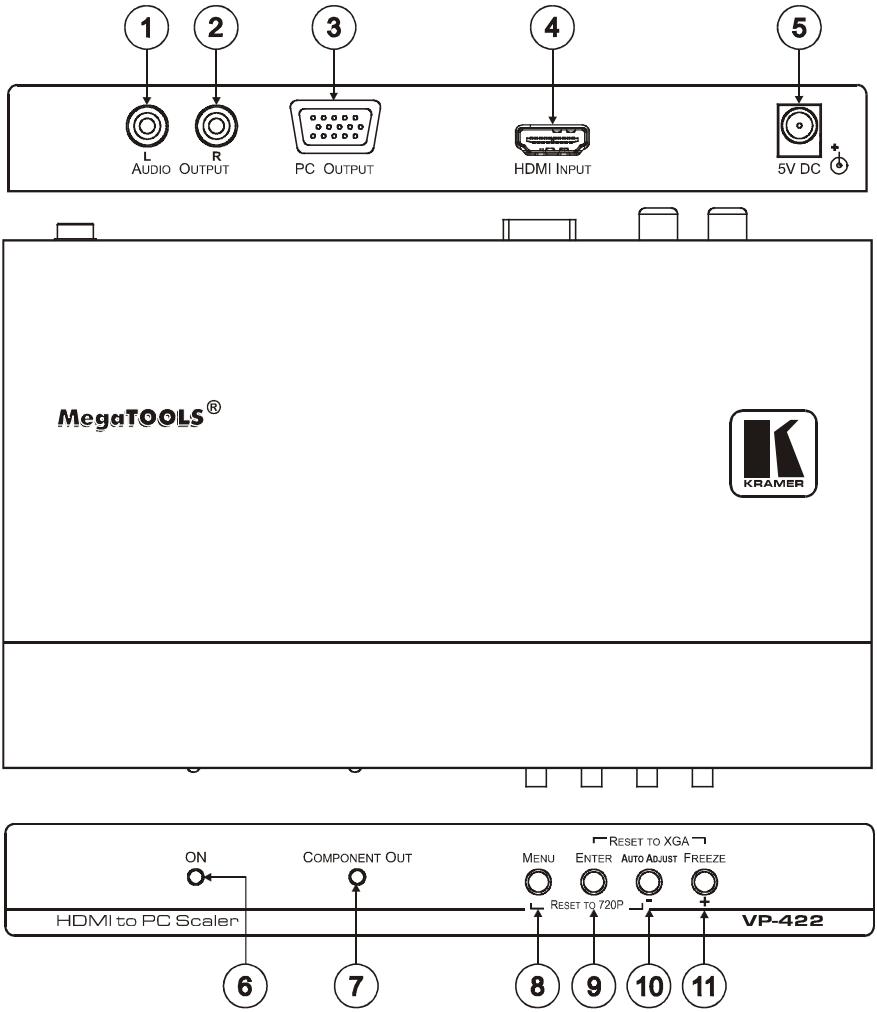


Figure 1: VP-422 HDMI to PC Scaler – Front and Rear View

Table 1: VP-422 HDMI to PC Scaler Front Panel Features

#	Feature		Function
1	*AUDIO OUTPUT* RCA Connectors	*L*	Connect to an unbalanced analog stereo acceptor
2		*R*	
3	*PC OUTPUT* 15-pin HD connector		Connect to computer graphics or HDTV acceptor
4	*HDMI INPUT* Connector		Connect to an HDMI source[1]
5	*5V DC*		+5V DC connector for powering the unit
6	*ON* LED		Lights green when the unit is powered on
7	*COMPONENT OUT* LED		Lights blue when component video is output and also during factory reset
8	*MENU* button		Press to enter/escape the on-screen display (OSD) menu. Press together with the – button to reset to 720p
9	*ENTER* button		In the OSD, press to choose the highlighted menu item. Press together with the + button to reset to XGA
10	– */AUTO ADJUST* button		In the OSD, press to move down through the list or to decrement the parameter value. When not in the OSD, press to automatically adjust the picture to fit the display
11	*+/FREEZE* button		In the OSD, press to move up through the list or to increment the parameter value. When not in the OSD, press to freeze the display

5 Connecting the VP-422 HDMI to PC Scaler

To connect the **VP-422**, as illustrated in the example in Figure 2 do the following:

1. Connect an HDMI source[1] (for example, a camera) to the HDMI INPUT connector.
2. Connect the PC OUTPUT 15-pin HD connector to a computer graphics or HDTV acceptor as follows:
   - When connecting to an XGA acceptor (RGBHV), then connect to the acceptor's XGA connector
   - When connecting to a component acceptor (YPbPr), then connect as shown in Table 2

Table 2: 15-pin HD PINOUT for HD

PIN #	Signal
1	Pr
2	Y
3	Pb
6, 7, 8	Ground

3. Connect the L and R audio OUTPUT RCA connectors to an analog stereo audio acceptor (for example, a power amplifier with speakers).

1 The HDMI source must not have HDCP encryption – when copy protection is detected, the unit's outputs will be switched off

4. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 2).

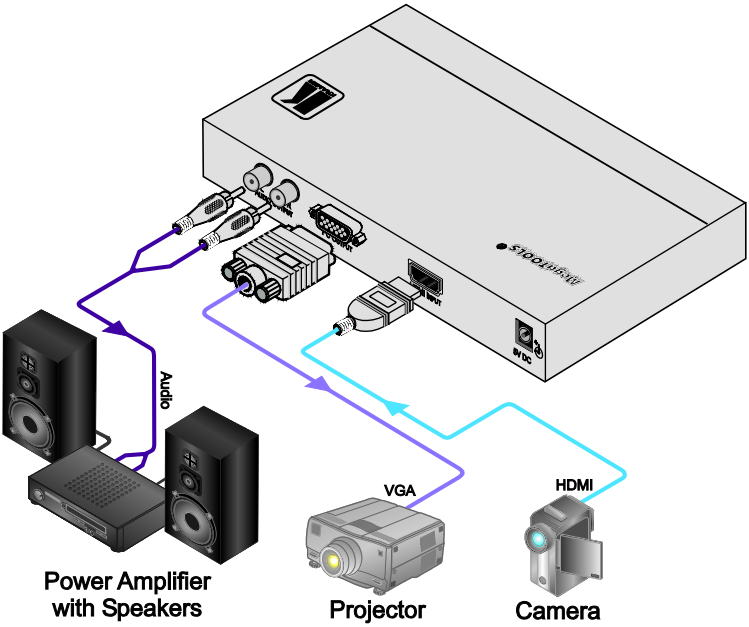


Figure 2: Connecting the VP-422 HDMI to PC Scaler

6 Operating the VP-422 HDMI to PC Scaler

The **VP-422** is operated directly via the front panel buttons and via the OSD menu (see Section 6.2).

6.1 Using the Front Panel Buttons During Normal Operation

During normal operation (without the OSD), using the front panel buttons performs the following functions. Pressing:

- MENU opens the on-screen display (OSD) main menu (see Section 6.2), the next press closes the OSD
- +/FREEZE freezes the display, the next press unfreezes the display
- – /AUTO ADJUST automatically centers the display
- MENU and –/AUTO ADJUST together resets the display to 720p and the COMPONENT OUT LED lights
- +/FREEZE and ENTER together resets the display to XGA and the COMPONENT OUT LED turns off

6.2 Using the OSD

You can use the OSD to set a wide variety of parameters. When the MENU button is pressed, the main menu opens allowing access to all the device settings (see Table 3).

When setting FINETUNE, COLOR, SIZE, OUTPUT (see Table 5), and OSD (see Table 6) a submenu opens with the applicable parameters.

6.2.1 Using the Front Panel Buttons While the OSD is Open

While the OSD is open, using the front panel buttons performs the following functions. Pressing:

- + and – moves up and down through the menu items and increments or decrements the parameter values
- ENTER selects and activates a menu item or accepts the parameter value set
- MENU closes the OSD menu[1]

As an example of setting parameters, to increase the contrast on the display:

1. From normal operation, press MENU.
   The OSD main menu appears on the screen.
2. Press the + or – button to highlight CONTRAST.
   CONTRAST changes to green when highlighted.
3. Press ENTER.
   The contrast value parameter changes to red.
4. Press the + button to increase the value (increase the contrast) or the – button to decrease the value (decrease the contrast).
   The value ranges from 0 to 100.
5. Press ENTER to set the value.
   The contrast value parameter changes back to white.
6. To return to normal operation, highlight EXIT and press ENTER; press MENU; or wait until the menu times out.

1 The menu times out by default after 10 seconds. To change the OSD display time, adjust the OSD/TIMER parameter

6.2.2 The MAIN MENU

Table 3 defines the MAIN MENU parameters and functions[1].

Table 3: The MAIN MENU Parameters and Functions

Parameter	Function
PARAMETER	Status
CONTRAST	Adjusts the contrast
BRIGHTNESS	Adjusts the brightness
FINETUNE	Adjusts the other ProcAmp parameters: PHASE, HUE, SATURATION and SHARPNESS (see Section 6.2.3)
COLOR	Adjusts the color of the display – RED, GREEN, BLUE
SIZE	Select the size of the display: FULL, PANSCAN, LETTER BOX, UNDERSCAN OVERSCAN, and BEST FIT
OUTPUT	Sets the output resolution (see Table 5)
OSD	Adjusts the parameters of the on-screen display (see Table 6)
FACTORY RESET[2]	Resets the device to its factory default parameters and automatically senses the input and output devices
INFORMATION	Displays the source, input and output resolutions and the software version
AUTO SYNC OFF	ON/OFF (Default is off) Turn the auto sync ON/OFF. When ON, a short period after not detecting a valid video signal on the selected input, the unit will disable the H and V syncs on the analog outputs until a valid input is again detected or any keypad is pressed
EXIT	Select to exit the OSD

6.2.3 The FINETUNE Menu

Table 4: The "FINETUNE" Submenu

Input Signal	Parameter	Function
COMPONENT	HUE	Set the color hue
	SATURATION	Set the color saturation
	SHARPNESS	Set the sharpness of the picture
	COLOR FILTER	Set to ON to enable color filtering
HDMI	COLOR FILTER	Set to ON to enable color filtering

6.2.4 The "OUTPUT" Submenu

The "OUTPUT" submenu allows you to choose the output resolution sent to the display. Press the + and/or – button to cycle through the list of resolutions.

Table 5 defines the resolutions available on the "OUTPUT" submenu and how they appear on the display.

1 the default value appears in brackets

2 The COMPONENT OUT LED lights blue

Table 5: The "OUTPUT" Submenu – Available Resolutions

Parameter	Appears As	Parameter	Appears As
480P	480p	XGA	1024x768 (default)
720P60	720p @60Hz	SXGA	1280x1024
1080I60	1080i @60Hz	UXGA	1600x1200
1080P60	1080p @60Hz	WXGA	1366x768
1080PRGB	1080PRGB	WSXGA	1680x1050
576P	576p	WUXGA	1920x1200
720P50	720p @50Hz	1280x800	1280x800
1080I50	1080i @50Hz	WXGA+	1440x900
1080P50	1080p @50Hz	SXGA+	1400x1050
VGA	640x480	1600x900	1600x900
SVGA	800x600		

6.2.5 The "OSD" Submenu

The "OSD" submenu allows you to adjust the location of the OSD, the length of time it is displayed, and the transparency of its background (see Table 6).

Table 6: The "OSD" Submenu – Available Adjustments

Parameter	Function
H-POSITION	Adjusts the horizontal position of the OSD on the screen
V-POSITION	Adjusts the vertical position of the OSD on the screen
TIMER	Adjusts the length of time in seconds the OSD appears on the screen
BACKGROUND	Adjusts the shade of the OSD background from black to transparent
EXIT	Select to exit to the Main Menu

7 Technical Specifications

Table 7 lists the technical specifications:

Table 7: Technical Specifications[1] of the VP-422 HDMI to PC Scaler

INPUT:	1 HDMI
OUTPUTS:	1 HDMI; 1 analog stereo audio on RCA connectors
OUTPUT RESOLUTIONS[2]:	PC: VGA, SVGA, XGA, SXGA, UXGA, WXGA, WSXGA, WUXGA, 1280x800, WXGA+, SXGA+, 1600x900, 1080PRGB HDTV: 480p, 576p, 720p @50/60Hz, 1080p @50/60Hz, 1080i @50/60Hz
OUTPUT REFRESH RATE:	60Hz for computer graphics resolutions, 50/60Hz for HDTV resolutions
PROCESSING DELAY:	20ms
CONTROLS:	Front panel buttons, ON and COMPONENT OUTPUT LEDs
POWER SOURCE:	5V DC, 860mA
DIMENSIONS:	18.8cm x 11.4cm x 2.45cm (7.4” x 4.5” x 0.98”) W, D, H
WEIGHT:	0.66kg (1.45lbs) approx.
ACCESSORIES:	Power supply
OPTIONS	19" rack adapter

1 Specifications are subject to change without notice

2 All resolutions are outputted @ 60Hz, except where noted

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

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To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

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This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

P/N: 2900-000580 Rev: 3

Kramer Electronics, Ltd.
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P/N: 2900-000580 REV 3